

## WHAT IS CLAIMED IS:

1. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence selected from the group consisting of:

(a) an isolated polynucleotide comprising nucleotides 1289 to 2464 of SEQ ID

NO:1, wherein said nucleotides encode a polypeptide of SEQ ID NO:2  
minus the start codon;

(b) an isolated polynucleotide comprising nucleotides 1286 to 2464 of SEQ  
ID NO:1, wherein said nucleotides encode a polypeptide of SEQ ID NO:2  
including the start codon; and

(c) a polynucleotide capable of hybridizing under stringent conditions to any  
one of the polynucleotides specified in (a)-(b), wherein said polynucleotide does not  
hybridize under stringent conditions to a nucleic acid molecule having a nucleotide  
sequence of only A residues or of only T residues.

2. The isolated nucleic acid molecule of claim 1, wherein the  
polynucleotide comprises a nucleotide sequence encoding a G-protein coupled  
receptor protein.

3. The isolated nucleic acid molecule of claim 2, wherein the nucleotide  
sequence comprises sequential nucleotide deletions from either the C-terminus or the  
N-terminus.

4. A recombinant vector comprising the isolated nucleic acid molecule of  
claim 1.

5. A method of making a recombinant host cell comprising the isolated  
nucleic acid molecule of claim 1.

6. A recombinant host cell produced by the method of claim 5.

7. The recombinant host cell of claim 6 comprising vector sequences.

8. An isolated polypeptide comprising an amino acid sequence selected  
from the group consisting of:

(a) comprising amino acids 2 to 393 of SEQ ID NO:2, wherein said  
amino acids 2 to 393 comprise a polypeptide of SEQ ID NO:2  
minus the start methionine; and

(b) a polypeptide comprising amino acids 1 to 393 of SEQ ID NO:2.

9. The isolated polypeptide of claim 8, wherein the full length protein comprises sequential amino acid deletions from either the C-terminus or the N-terminus.

5 10. An isolated antibody that binds specifically to the isolated polypeptide of claim 9.

11. A recombinant host cell that expresses the isolated polypeptide of claim 8.

12. A method of making an isolated polypeptide comprising:

10 (a) culturing the recombinant host cell of claim 11 under conditions such that said polypeptide is expressed; and

(b) recovering said polypeptide.

13. The polypeptide produced by claim 12.

14. A method for preventing, treating, or ameliorating a medical condition,  
15 comprising administering to a mammalian subject a therapeutically effective amount of the polypeptide of claim 8 or the polynucleotide of claim 1.

15. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:

(a) determining the presence or absence of a mutation in the polynucleotide of  
20 claim 1; and

(b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or absence of said mutation.

16. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:

25 (a) determining the presence or amount of expression of the polypeptide of claim 8 in a biological sample; and

(b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or amount of expression of the polypeptide.

17. A method for identifying a binding partner to the polypeptide of claim  
30 11 comprising:

(a) contacting the polypeptide of claim 11 with a binding partner; and

(b) determining whether the binding partner effects an activity of the polypeptide.

18. A method of identifying an activity in a biological assay, wherein the method comprises:

- 5 (a) expressing SEQ ID NO:1 in a cell;
- (b) isolating the supernatant;
- (c) detecting an activity in a biological assay; and
- (d) identifying the protein in the supernatant having the activity.
19. A peptide modulator of HGPRBMY14 biological activity comprising a
- 10 polypeptide having a polypeptide sequence selected from the group consisting of SEQ ID NO:87, 88, 89, 90, or 91.
20. An isolated nucleic acid molecule consisting of a polynucleotide having a nucleotide sequence selected from the group consisting of:
  - (a) an isolated polynucleotide comprising nucleotides 1289 to 2464 of
  - 15 SEQ ID NO:1, wherein said nucleotides encode a polypeptide of SEQ ID NO:2 minus the start codon; and
  - (b) an isolated polynucleotide comprising nucleotides 1286 to 2464 of SEQ ID NO:1, wherein said nucleotides encode a polypeptide of SEQ ID NO:2 including the start codon.
- 20 21. The isolated nucleic acid molecule of claim 20 wherein the polynucleotide comprises a nucleotide sequence encoding a G-protein coupled receptor protein.
22. The isolated nucleic acid molecule of claim 21, wherein the nucleotide sequence comprises sequential nucleotide deletions from either the C-terminus or the N-terminus.
- 25 23. A recombinant vector comprising the isolated nucleic acid molecule of claim 20.
24. A recombinant host cell comprising the recombinant vector of claim 23.
- 30 25. An isolated polypeptide consisting of an amino acid sequence selected from the group consisting of:

(a) comprising amino acids 2 to 393 of SEQ ID NO:2, wherein said amino acids 2 to 393 comprise a polypeptide of SEQ ID NO:2 minus the start methionine; and

<sup>30</sup> <sup>30</sup> (b) a polypeptide comprising amino acids 1 to 393 of SEQ ID NO:2.

5 <sup>30</sup> 26 A method of screening for candidate compounds capable of binding to and/or modulating activity of a G-protein coupled receptor, comprising:

a.) contacting a test compound with a substantially or partially purified polypeptide according to claim 8; and

b.) selecting as candidate compounds those test compounds that bind to and/or modulate activity of the polypeptide.

10 <sup>25</sup> 26 The method according to claim 26, wherein the candidate compounds are small molecules.

<sup>25</sup> 26 A cell comprising NFAT/CRE and the polypeptide of claim 8.

<sup>27</sup> 26 A cell comprising NFAT G alpha 15 and the polypeptide of claim 8.

15 <sup>24</sup> 29 A method of screening for candidate compounds capable of modulating activity of a G-protein coupled receptor-encoding polypeptide, comprising:

(a) contacting a test compound with the cell according to claim 28; and

(b) selecting as candidate modulating compounds those test compounds that modulate activity of the G-protein coupled receptor polypeptide.

20 <sup>31</sup> 30 The method according to claim 29, wherein the candidate compounds are agonists of G-protein coupled receptor activity.

<sup>30</sup> 31 The method according to claim 29, wherein the candidate compounds are antagonists of G-protein coupled receptor activity.

25 <sup>32</sup> 32 The cell according to claim 28 wherein the HGPRBMY14 polypeptide is expressed at low, intermediate, or high levels of expression.

<sup>33</sup> 33 A method of treating a disorder related to aberrant NF-kB activity comprising the step of administering an antagonist of the polypeptide provided in claim 8.

30 <sup>34</sup> 34 A method of treating a proliferative disorder comprising the step of administering an antagonist of the polypeptide provided in claim 8. ✓

35. The method for preventing, treating, or ameliorating a medical condition of claim 14, wherein the medical condition is a disorder directly linked to aberrant neuropeptide Y receptor activity.
- 5 36. The method for preventing, treating, or ameliorating a medical condition of claim 14, wherein the medical condition is an eating or appetite disorder.
37. The method for preventing, treating, or ameliorating a medical condition of claim 14, wherein the medical condition is a disorder linked to aberrant DNA synthesis.
- 10 38. The method for preventing, treating, or ameliorating a medical condition of claim 14, wherein the medical condition is a male reproductive disorder.
- 15 39. The method for preventing, treating, or ameliorating a medical condition of claim 14, wherein the medical condition is testicular cancer.